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Serial No.: 09/701,947  
Confirmation No.: 9854  
Filed: December 5, 2000  
For: STABILIZED BIOACTIVE PEPTIDES AND METHODS OF IDENTIFICATION, SYNTHESIS AND USE

### Amendments to the Claims

Please cancel claims 1, 61-88, 98-103 and 106-119, and amend the pending claims as follows. This listing of claims replaces all prior versions, and listings, of claims in the above-identified application.

1-88. (Canceled)

89. (Currently amended) A non-naturally ~~occurring~~ occurring polypeptide comprising a bioactive peptide, a first stabilizing group attached to the N-terminus of the bioactive peptide, and a second stabilizing group attached to the C-terminus of the bioactive peptide, wherein the first stabilizing group is selected from the group consisting of a small stable protein, Pro-, Pro-Pro-, Xaa-Pro- and Xaa-Pro-Pro-, and wherein the second stabilizing group is selected from the group consisting of a small stable protein, -Pro-, -Pro-Pro-, -Pro-Xaa and -Pro-Pro-Xaa.

90. (Previously presented) The polypeptide of claim 89 wherein the small stable protein is selected from the group consisting of Rop protein, glutathione sulfotransferase, thioredoxin, maltose binding protein, and glutathione reductase.

91. (Previously presented) The polypeptide of claim 89 wherein the first stabilizing group is Pro-Pro- and the second stabilizing group is -Pro-Pro.

92. (Previously presented) The polypeptide of claim 89 wherein at least one of the first and second stabilizing groups comprises a small stable protein.

93. (Previously presented) The polypeptide of claim 92 wherein the small stable protein is

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a four-helix bundle protein.

94. **(Previously presented)** The polypeptide of claim 92 wherein the small stable protein is selected from the group consisting of Rop protein, glutathione sulfotransferase, thioredoxin, maltose binding protein, and glutathione reductase.
95. **(Previously presented)** The polypeptide of claim 94 wherein the small stable protein is Rop protein.
96. **(Previously presented)** The polypeptide of claim 89 which is an antimicrobial peptide.
97. **(Previously presented)** The polypeptide of claim 89 which is a therapeutic peptide drug.
- 98 - 103. **(Canceled)**
104. **(Previously presented)** A non-naturally occurring polypeptide comprising:  
a bioactive peptide;  
a first stabilizing group attached to the N-terminus of said bioactive peptide, wherein said first stabilizing group is selected from the group consisting of a small stable protein, -Pro-, -Pro-Pro-, -Xaa-Pro- and -Xaa-Pro-Pro-;  
a second stabilizing group attached to the C-terminus of said bioactive peptide, wherein said second stabilizing group is selected from the group consisting of a small stable protein, -Pro-, -Pro-Pro-, -Pro-Xaa and -Pro-Pro-Xaa; and  
a cleavage site immediately preceding the first stabilizing group.
105. **(Previously presented)** A non-naturally occurring polypeptide comprising:  
a bioactive peptide;

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a first stabilizing group attached to the N-terminus of said bioactive peptide, wherein said first stabilizing group is selected from the group consisting of a small stable protein, Pro-, Pro-Pro-, Xaa-Pro- and Xaa-Pro-Pro-;

a second stabilizing group attached to the C-terminus of said bioactive peptide, wherein said second stabilizing group is selected from the group consisting of a small stable protein, -Pro, -Pro-Pro, -Pro-Xaa and -Pro-Pro-Xaa; and

a cleavage site immediately following the second stabilizing group.

106-119. (Canceled)

120. (Previously presented) A non-naturally occurring polypeptide comprising a bioactive peptide and a stabilizing group attached to either or both of the N-terminus or C-terminus of the bioactive peptide, wherein the stabilizing group attached to the N-terminus, if present, comprises Xaa-Pro-Pro-, and the stabilizing group attached to the C-terminus, if present, comprises -Pro-Pro-Xaa.

121. (Previously presented) A non-naturally occurring polypeptide comprising a bioactive peptide and a stabilizing group comprising Rop protein attached to either or both of the N-terminus or C-terminus of the bioactive peptide.

122. (Previously presented) A non-naturally occurring polypeptide comprising a bioactive peptide and a stabilizing group comprising a four-helix bundle protein attached to either or both of the N-terminus or C-terminus of the bioactive peptide.

123. (Previously presented) The polypeptide of claim 89 wherein the bioactive peptide is a naturally occurring bioactive peptide.

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124. **(Previously presented)** The polypeptide of claim 104 wherein the bioactive peptide is a naturally occurring bioactive peptide.

125. **(Previously presented)** The polypeptide of claim 105 wherein the bioactive peptide is a naturally occurring bioactive peptide.

126. **(Previously presented)** The polypeptide of claim 120 wherein the bioactive peptide is a naturally occurring bioactive peptide.

127. **(Previously presented)** The polypeptide of claim 121 wherein the bioactive peptide is a naturally occurring bioactive peptide.

128. **(Previously presented)** The polypeptide of claim 122 wherein the bioactive peptide is a naturally occurring bioactive peptide.